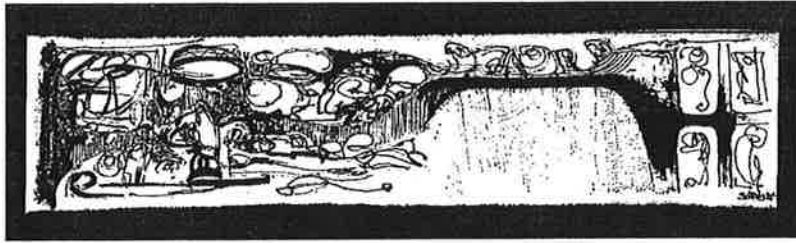
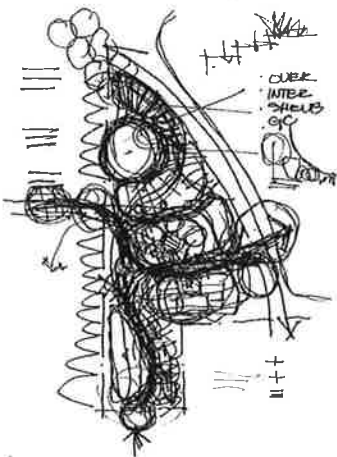


Landscape Architecture
CAL POLY SAN LUIS OBISPO
College of Architecture & Environmental Design

The Design Process



Introduction



Landscape Architecture is very much a problem solving profession. As members of an integrative discipline that considers multiple values and meanings in arriving at solutions for land use problems, landscape architects typically deal with a great deal of complex information and work with a number of allied professions on any typical project. The complexity of dealing with this information and these multiple players can become unwieldy unless guided by some framework to give structure to project efforts. The DESIGN PROCESS provides this framework. The process you are becoming more familiar with is very much standardized within the design and creative problem solving professions.

Nature of the Design Process

While the Design Process described above gives guidance and a framework to the progress of the work, it is a flexible framework and not a purely linear process. It is iterative and cyclical in nature with many feedback loops. Phases overlap and thinking about the work often incorporates several phases at once. This presents some difficulty in teaching the design process and in gaining comfort with it early in your design education.


Since language, the tool of teaching is most often a linear discreet tool it is lacking to a degree in its descriptive ability to convey the integrative holistic thinking and experience of the design process. Also, for teaching purposes (ironically to make things clearer) we talk about distinct phases of the process that are very integrated and experienced simultaneously. Finally, our typical learning model calls for discrete definitions and clear boundaries when classifying information.


As you progress with your explorations, be cognizant of this process and what phase you are working in, how the phases overlap in your thinking and experience. Try to recognize the feedback loops and the organic, holistic nature of the process.

"The design process is characterized by the movement from the general to the specific. As we work within a phase of the process we address the bigger issues of that phase and refine our work to the specific. So too with the entire process, the problem solving moves from the general to the specific with the work building upon previous efforts to a refined resolution"

Stages/Phases of the Design Process

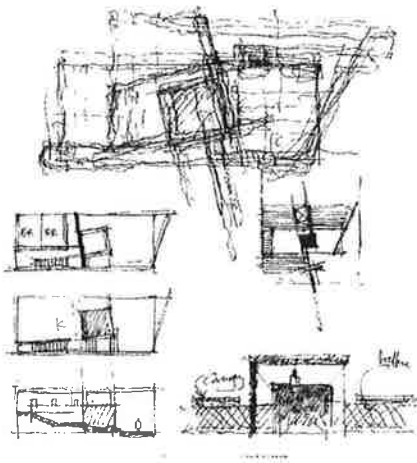
While different designers and authors vary in the terms used to characterize the Phases of this process, we can describe them as follows:

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1. Problem Definition & Acceptance
 2. Site Inventory & Analysis
 3. Program Development & Program Fit Analysis
 4. Conceptual Design
 5. Schematic Design

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6. Design Development
 7. Construction Documentation
 8. Bidding Process
 9. Construction Observation & Follow Up
 10. Post Occupancy Evaluation

This term we will focus on the first five of the listed phases. Below are brief definitions of each of the above nine Phases.

1. Problem Definition & Acceptance of the Problem



You must accept the problem to avoid procrastination or avoidance. Not all problems we are given the opportunity to solve appeal to us at first glance, yet to become professional in our approach and to learn to accept the opportunities that we are offered, we must practice shaping our attitude to respond proactively and with a positive out-look.

Problem definition considers:

- o The inherent characteristics to the broad task that is your charge
- o Expressed client needs, desires
- o The time frame available to resolve the problem
- o The resources available to solve the problem
- o The information needed to solve the problem

Problem definition also considers the *"go slow to become faster"* principle in that it requires you think before you act in order to get a firm understanding of just what actions are appropriate to take.

In professional practice, the Landscape Architect's problem definition becomes formalized a written *"Scope of Service and Fee Proposal."* The Scope of Service and Fee Proposal are at the heart of the legal contract for services between the landscape architect and the client. Thus, it becomes clear that *in the real world of professional practice, good problem definition sets the stage for the entire design effort.*

"The best design solutions reflect a clear understanding of the problem at hand."

2. Site Inventory & Analysis

Site Inventory

Site Inventory refers to:

- The gathering and review of *pertinent information* regarding the project and site. Generally, there is much more information available about a particular site or project than needs to be considered.
- With a clear understanding of the problem to be solved, information gathering can be directed efficiently.

"The key in the inventory stage is to focus on cogent information."

The following are some of the information sources/ categories that may be considered in the Site Inventory phase:

- Planning, Zoning and Regulatory information
- Soils & Geo-technical Considerations
- On-site Hydrology – Stream, Wetlands, Water table, Surface runoff patterns and drainage
- Flora, Fauna and Habitat
- Access and Circulation – pedestrian & vehicular, transit
- Existing Infrastructure – utilities, communication, architecture etc.
- Context – adjacent uses, connections, community character
- Cultural considerations, history, aesthetics, values

The sketch below on the next page is a quick "charrette sketch" site analysis mapping out the issues related to evaluating a local site for its landscape mosaic issues – the issues relating to natural & cultural corridors, patches, matrix landscape and edge effect. Such a sketch is based on a site visit and review of aerial photo maps of site context. Its value is in seeing context issues for evaluation of issues and opportunities

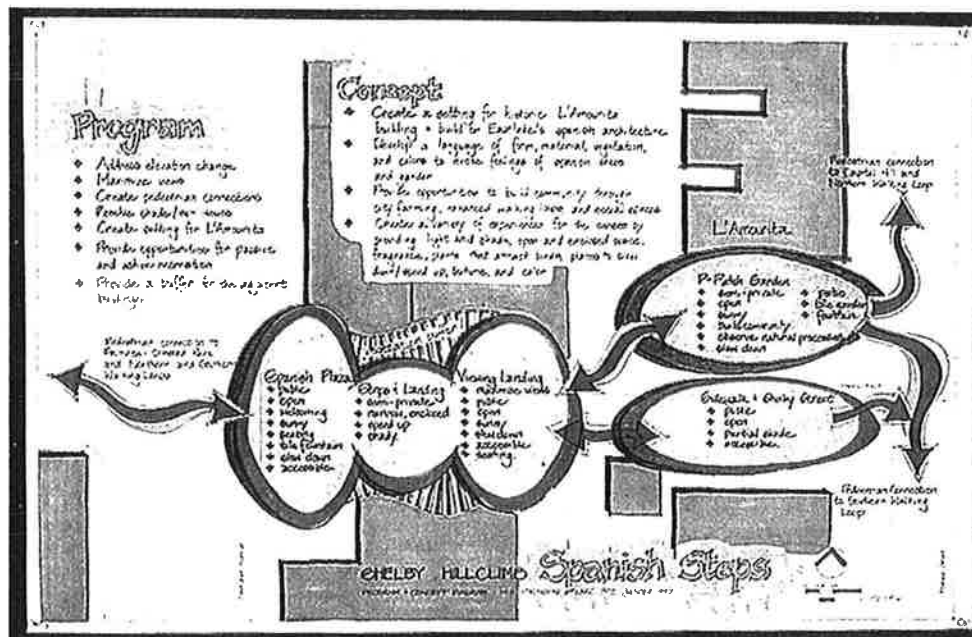
3. Program Development & Analysis

The Program refers to:

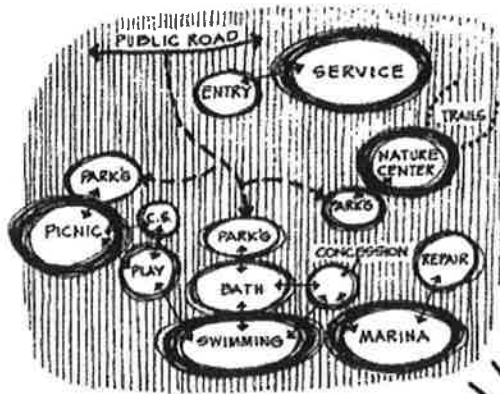
- The set of intended uses, activities, elements or features that are to occur on site.
- Also includes any activities/infrastructure requirements needed to support intended uses/activities/features/elements. Samples of support elements are listed below:
 - Parking & Access
 - Maintenance
 - Utility infrastructure
 - Signage
 - Lighting
 - Refuse disposal/Recycling

As the landscape architect, your client often gives you a predetermined general program. In these (and all cases) The Landscape Architect has a responsibility to:

- Evaluate the appropriateness of that program for the chosen site.
 - Tennis courts on a steeply sloping site?
 - Nuclear waste storage adjacent to an important ground water aquifer?
- Evaluate the appropriateness of the uses within the program for specific locations on site
 - A butterfly garden in a deeply shaded area?
 - A large parking area on top of an existing wetland?
- Evaluate the spatial relationships between various program elements/activities
 - Children's play in relation to vehicular traffic?
 - Picnic area in relation to a noisy hi-way?
 - Intense high activity in relation to shorebird nesting habitat interpretive station
- Often designers make quick bubble diagrams to study and document this program analysis phase. A Matrix is sometimes used to indicate suitability of site rooms or zones for specific program activities.

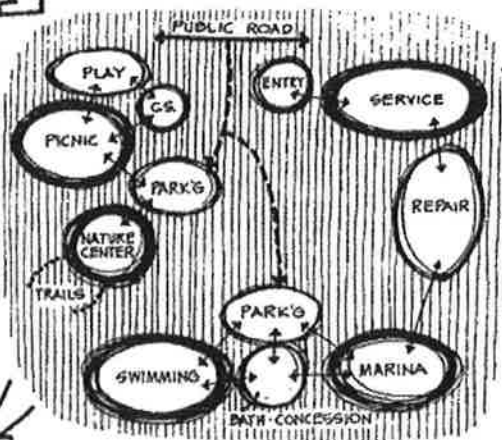


RELATIONSHIP DIAGRAMS



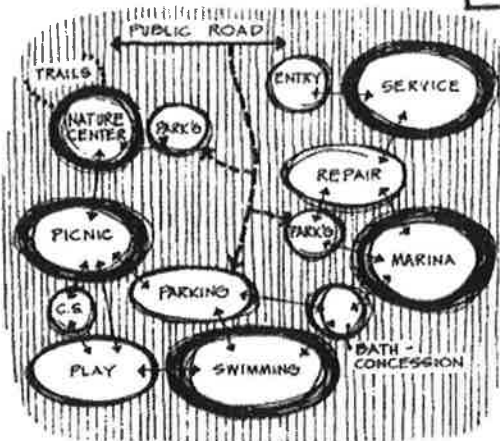
- + ENTRY CONTROL NEAR PUBLIC ROAD
- + PARKING - SPLIT, DOESN'T PENETRATE ACTIVITIES
- + ONE CONCESSION FOR SWIMMING & MARINA WHICH SHOULD BOTH BE NEAR WATER.
- + PICNIC & SWIMMING SHARE PLAYFIELD.
- MARINA NOISE & DEBRIS CONFLICT WITH SWIMMING.
- PICNIC DIVORCED FROM NATURE CENTER.
- NATURE CENTER WEDGED BETWEEN NOISY SERVICE AND REPAIR.

- + BATH-CONCESSION COMBINED TO SEPARATE SWIMMING & MARINA.
- + PICNIC & NATURE CENTER PARKING COMBINED.
- + SWIMMING & MARINA PARKING COMBINED.
- + REPAIR & SERVICE (NOISE & DEBRIS) COMBINED.
- PICNICKERS GO THRU N.C. AND TRAILS TO SWIM & BOAT.
- ROAD CUT PICNIC FROM BOATING.



- + PARKING - SPLIT, DOESN'T PENETRATE ACTIVITIES (PEOPLE DON'T CROSS ROADS TO GET TO ANYTHING).
- + N.C. ISOLATED BUT CONVENIENT TO PICNIC AREA WHICH WILL PROVIDE MAJORITY OF VISITORS.
- + BATH-CONCESSION SEPARATE MARINA & SWIMMING.
- + PLAY SEPARATE BUT USABLE BY BOTH SWIMMING AND PICNIC.
- + MARINA, REPAIR & SERVICE TOGETHER - NOISE ISOLATED FROM REST OF PARK.
- + ENTRY CONTROL NEAR PUBLIC ROAD, FIRST CONTACT.

THIS IS IT !



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Frequently the landscape architect will develop the program, creatively, fleshing it out with complimentary uses and activities.

Program Analysis makes use of good problem definition and a sound site analysis diagram

Program Development is an important and creative part of design

4. Conceptual Design

This is the initial Ideation Design phase. The Site and Program Fit Analyses guide it. Conceptual design begins to give form, size and organization to the program elements on site. The main circulation spines are explored. Rough area requirements are given to the proposed uses. This design phase starts very rough, often in bubble diagram form before proceeding to loose form giving.

"Conceptual Design is characterized by free and quick exploration of options"

Concept vs. Conceptual Design

CONCEPT

Something conceived in the mind

A thought, idea or notion

A universal notion

A theoretical construct

An idea comprehending essential attributes

We need for a moment to distinguish between the terms "CONCEPT" and the idea of "Conceptual Design." Throughout your education in landscape architecture you will be asked the question, "What is your concept?" You should always ask yourself that question too. What you are really being asked is, *"what is the unifying idea behind your design,"* what is your main idea? When asked this question you need to be prepared to briefly and compellingly:

- Define your concept,
- State why you selected this concept, why it is appropriate,
- Point out how your design expresses your concept.

In general, your concept should be clear, comprehensible, and meaningful and have a sound relationship to the site and program. Your concept can range from the beautifully straight forward and elegant to the deeply symbolic. Below are some sample general concept ideas to stimulate your thinking about "Concept."

- Poetic: The Garden as Metaphor
- Philosophic: Uncovering and giving voice to the dualistic nature of material existence
- Program Driven: Maximize the Expression of Water in all its forms through natural processes
- Cultural: Express Native American Myth and Ritual through spatial form, materials and detail articulation

A. Conceptual Design Content

- **Expresses an overall organizational structure** – the skeleton of the site so to speak. This organizational skeleton is frequently (but not necessarily always) the circulation system, which recognizes the needed connections, site movement and site physiographic structure. Topography, open space or water drainage patterns are other characteristics along with others that may serve at the site design organizational structure
- **Gives relative size and form to the rooms or spaces** that combine to provide for the intended program
- **Expresses devices/elements that define the spaces/rooms and what their intended character is.** Early diagrams express these elements/characteristics very generally & often diagrammatically. As the phase proceeds, so does the refinement from the very general to somewhat more specific elaboration.
 - high/low,
 - transparent/opaque,
 - soft/hard,
 - penetrable/impenetrable
 - large/small
 - rectilinear/curvilinear
 - highly articulated surface/smooth
- **Expresses location of transitions/connections to:**
 - the overall site structure & circulation.
 - the adjacent conditions and
 - transitions/connections between rooms/spaces of the site
 - off site natural features/systems

B. Conceptual Design Process

- The physical on-the-boards conceptual design process has the following characteristics:
 - Uses site analysis (environmental framework evaluation) as a beginning spatial organizer or framework
 - Keeps in mind your mission statement and concept as you move forward – how do these guide your decision making process
 - Uses trace paper and soft pencil or marker to quickly explore & express ideas
 - Conceptual drawings start very loose and expressive
 - It is iterative – uses trace overlays to explore refine as you go

B. Conceptual Design Process Continued

- Graphic expression occurs along a gradient
 - From very diagrammatic to more fully representational.
 - Start at the diagrammatic end and move **quickly to flesh out the big picture**
 - ✓ the structure/circulation,
 - ✓ the major spaces, the building/features locations,
 - ✓ the primary connections/transitions.

Proceed as you work with the iterative refinement process to flesh out more of the detail.

As with many terms in design, "conceptual design" varies in the level of accuracy and detail shown from office to office, project to project and designer to designer. Approach each trace layer as a working document suitable for discussion. Refine as you move forward – go slower to be faster approach.

C. Rooms Analogy in Conceptual Design

At this point, as you begin the conceptual design process, it may be fruitful to revisit two old friends that can give direction to your efforts. Remember that, as in architecture, outdoor space can be conceived as being composed of rooms. In the broad sense the sense, these rooms are defined by:

- **ceilings -- overhead plane**
- **floors - ground plane**
- **walls - vertical plane**
- **windows/entries/exits -- openings**
- **transitions/connections -- the porches, foyers and hallways**

The following characteristics of the elements that define space have been repeated from the above "Conceptual Design Content" section as a reminder and an indication of the importance of consideration of these elements and their character. They are worth repeating here from above

- Some of the primary characteristics of the elements that define space:
 - high/low,
 - transparent/opaque,
 - soft/hard,
 - penetrable/impenetrable
 - large/small
 - rectilinear/curvilinear
 - highly articulated surface/minimal articulation
 - placement and orientation

C. Rooms Analogy Continued

These elements that define rooms can be composed of a variety of materials and may be characterized by varying degrees of solidity or transparency. Rooms are often experienced in a sequence, a narrative or story unfolds one might say. Rooms have a spatial relationship to one

another. The scale and character of each room is appropriate for its intended function. Each room is part of a bigger whole and is related to the overall design. The rooms are linked by a circulation system that often serves as an organizational spine.

"When making decisions about the placement, orientation and characteristics of the elements that define the spaces you are designing, always have your design concept and the meaning you want to express in the forefront of your thinking."

"Meaning and Concept lead to spatial definition, form and surface articulation."

5. Schematic Design

In this phase the form and relationships of spaces and features are refined. Dimensions become more accurate. Preliminary vertical spot grades may be given. General materials are indicated and vegetation massing is suggested. Schematic Design Plans are drawn and supplemented with section/elevation and sketch drawings. As with all drawings and phase of the design process, schematic design begins loose and proceeds to refinement.

6. Design Development

Many people lump Schematic Design and Design Development into one phase. For this course we are breaking them out as separate phases for definition purposes. In Design Development continued refinement of a chosen design alternative proceeds. The landscape architect takes a closer look at grades, dimensions, and relations to the architecture and infrastructure, materials and plantings. Drawings are more detailed with the intention of making progress toward construction documentation.

7. Construction Documentation

During this phase, the Landscape Architect prepares drawings and written specifications that are used to bid and build the project. These drawings and specifications are often referred to as the bid documents or contract documents. These documents are legal documents. During this phase detailed design occurs. Design at this level is very specific to construction requirements, horizontal arrangement, vertical elevations, materials to be used, plants, color, texture, surface treatment etc.

8. Bidding Process

This is an administrative phase in which the landscape architect is involved to varying degrees. The project is advertised for bid. A pre-bid meeting is held with prospective bidders and the client to answer questions about the scope of work and design intent. After bids are submitted and opened, the landscape architect may be asked to evaluate the bids.

9. Construction Observation & Follow Up

Typically a pre-construction meeting is held to introduce the various design consultants and the client to the contractors to whom the bid has been awarded. This meeting addresses questions regarding communication paths, project scheduling and sequence of construction. Issues of design intent are also addressed. During this phase, the landscape architect answers questions over the phone from contractors, co-ordinates with other disciplines as the work progresses and makes periodic field visits to observe the progress of the work to ensure desired quality & design intent are being met and that contract documents are being followed.

10. Post Occupancy Evaluation

This is an important phase in the design process that is typically overlooked and that we do not generally receive compensation for from a client. Yet it is the best way to learn from our successes and mistakes as designers. We can observe how our designs are used and determine whether our intent for use is actually being realized and if not why not. We can examine the performance of the construction details. Is the site work performing? Are there durability or maintenance issues we have not foreseen? Is the scale of the spaces proper for the intended experience? It is post occupancy evaluation that refines our sense of what works and what does not and is the most valuable of learning laboratories

Design Elements, Tools & Qualities

Note, the organization that follows may not totally dovetail with all authors. Ching for example may organize the terms under different categories. The important issue is awareness of the meaning of the terms as they apply to design and how you continually refer to and grow in your ability to bring your awareness of these tools and principles to your work.

Elements

<i>Point</i>	<i>Line</i>	<i>Plane</i>
<i>Form</i>	<i>Volume</i>	<i>Texture</i>
<i>Tone</i>	<i>Color</i>	<i>Value</i>

Characteristics of Form

<i>Size</i>	<i>Shape</i>	<i>Placement</i>	<i>Orientation</i>	
<i>Surface Articulation</i>		<i>Texture</i>	<i>Color</i>	<i>Value</i>
<i>Transparency</i>				

Tools in composition & Spatial Design

<i>scale</i>	<i>proportion</i>	<i>balance</i>
<i>symmetry (axial & occult)</i>		<i>contrast</i>
<i>hierarchy</i>	<i>repetition</i>	<i>pattern</i>
<i>sequence</i>	<i>rhythm</i>	<i>transformation</i>

Organizational Configuration tools & Principles

<i>linear</i>	<i>curvilinear</i>
<i>angular</i>	<i>circular</i>
<i>radial</i>	<i>axial</i>
<i>centralized</i>	<i>clustered</i>
<i>grid</i>	<i>datum</i>

Qualities of Composition/Spatial Design

<i>harmony</i>	<i>unity</i>	<i>continuity</i>
<i>monumental</i>	<i>intimate</i>	
<i>movement</i>	<i>direction</i>	
<i>focus</i>	<i>dispersal</i>	
<i>introspective</i>	<i>expansive</i>	
<i>passive</i>	<i>active</i>	
<i>tranquility</i>	<i>tension</i>	
<i>simplicity</i>	<i>complexity</i>	
<i>contextual</i>	<i>iconic</i>	
<i>formal</i>	<i>informal</i>	

Memorable Experiential qualities of the landscape Developed by Students

Note a summer studio of non-majors with no design background developed the following

Solitude Tranquility Light & Shadow (3)

Surprise Enchantment Mystery

Awe (2) Color Texture

Motion Natural Sounds

Ability to trigger memories

Ability to evoke reflection on one's personal role in the landscape

Ambiguity: stillness in motion

Note:

Seems to me the class identified two distinct categories of landscape quality

Sensual – e.g. Light, shadow, color, texture, sound. No one mentioned fragrance or smell which can be delightful or not but should be considered.

Psychological capabilities or qualities invoked – tranquility, surprise, enchantment, awe, memory, ambiguity, mystery, intimacy etc.

So we react to the direct stimulus of light warmth, soothing sound etc., and also to the more complex inner personal world that the combination of qualities can evoke or open.